

**REMARKS**

The Office Action of March 10, 2009, was received and carefully reviewed. Reconsideration and withdrawal of the currently pending rejections are requested for the reasons advanced in detail below.

Claims 1-27 and 29-47 were pending prior to the instant amendment. By this amendment, claim 18 has been amended to clarify the claimed TFT structure with the description regarding a gate insulating film. No new matter has been introduced. Applicants thank the Examiner for the indication of allowable subject matter in claims 1-17, 19-27, 29, 30, 36, 37 and 39-47. Consequently, claims 1-27 and 29-47 are currently pending in the instant application with claims 18, 31 and 32 being independent.

In the Office Action, claims 18, 31-35 and 38 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Pat. Pub. 2003/0083203 to Hashimoto (Hashimoto) in view of U.S. Pat. Pub. 2004/0142544 to Kimura et al. (Kimura). Hashimoto in view of Kimura, however, fails to render the claimed invention unpatentable. Each of the claims recite a specific combination of features that distinguishes the invention from the prior art in different ways. For example, Applicants respectfully submit that present independent claims 18, 31 and 32, and the claims dependent therefrom, are patently distinguishable over *Hashimoto* and *Kimura*, taken either alone or in combination, since *Hashimoto* and *Kimura* fail to disclose, teach, or suggest all of the features recited in the pending claims.

For example, independent claim 18 is directed to, *inter alia*, the features of forming a source electrode and a drain electrode, forming a semiconductor film over the source electrode and the drain electrode, forming a gate insulating film to cover the semiconductor film, forming a first liquid-repellent region by a plasma treatment on a surface for forming a gate electrode in an upper portion of the gate insulating film, forming selectively a first

lyophilic region in the first liquid-repellent region, and forming the gate electrode in the first lyophilic region of the surface of the semiconductor film by dropping a composition including a conductive material. Applicants respectfully submit that *Hashimoto* and *Kimura*, taken either alone or in combination, fail to disclose, teach, or suggest at least these features of independent claim 18.

Furthermore, independent claim 31 is directed to, *inter alia*, the features of discharging a droplet onto the lyophilic region by a droplet discharging unit, in a treatment chamber including the droplet discharging unit and the light irradiation unit. Applicants respectfully submit that *Hashimoto* and *Kimura*, taken either alone or in combination, fail to disclose, teach, or suggest at least these features of independent claim 31.

Additionally, independent claim 32 is directed to, *inter alia*, the features of forming selectively a lyophilic region in the object to be treated in which the liquid-repellent region is formed by the light irradiation unit in the second treatment chamber so that the object to be treated includes the lyophilic region and the liquid-repellent region. Applicants respectfully submit that *Hashimoto* and *Kimura*, taken either alone or in combination, fail to disclose, teach, or suggest at least these features of independent claim 32.

At the very least, the applied references, whether taken alone or in combination, fail to disclose or suggest any of these exemplary features recited in independent claims 18, 31 and 32.

The Examiner has failed to establish a *prima facie* case of obviousness for at least four reasons. First, the Examiner has not demonstrated how *Hashimoto* and *Kimura*, whether taken alone or in combination, disclose or suggest each and every feature recited in the claims. *See* M.P.E.P. § 2143 (7th ed. 1998). Second, the Examiner has not shown the existence of any reasonable probability of success in modifying *Hashimoto*, the base

reference, based on the teachings of Kimura the secondary reference, in a manner that could somehow result in the claimed invention. *See id.* Third, the Examiner has not identified any suggestion or motivation, either in the teachings of the applied references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the apparatus of Hashimoto in a manner that could somehow result in the claimed invention. *See id.* Finally, the Examiner has not explained how his obviousness rationale could be found in the prior art — rather than being a hindsight reconstruction of Applicants' own disclosure. *See id.*

Each of the Examiner's factual conclusions must be supported by "substantial evidence" in the documentary record, as required by the Federal Circuit. *See In re Lee*, 61 U.S.P.Q.2d 1430, 1435 (Fed. Cir. 2002). The Examiner has the burden of documenting all findings of fact necessary to support a conclusion of anticipation or obviousness "less the 'haze of so-called expertise' acquire insulation from accountability." *Id.* To satisfy this burden, the Examiner must specifically identify where support is found within the prior art to meet the requirements of 35 U.S.C. §§ 102(b) and 103. In this case, however, the Examiner has failed to satisfy his burden of demonstrating how Hashimoto, taken alone or in combination with Kimura, can either anticipate or render obvious each and every one of the limitations present in independent claims 18, 31 and 32, as required by the M.P.E.P. and Federal Circuit jurisprudence.

Claim 18 recites a feature of manufacturing a thin film transistor which comprises forming selectively a lyophilic region in a liquid-repellent region. On page 4, lines 16-18 of the Office Action, the Examiner asserts that "Hashimoto fails to show, pertaining to claim 18, forming selectively (first) lyophilic region in the liquid-repellent region so that the surface includes the lyophilic region and the liquid-repellent region." On the other hand, on page 5,

lines 3-4 of the Office Action, the Examiner relies upon Kimura regarding “laser irradiation to heat specific regions of the semiconductor film forming irradiated and non-irradiated regions.” Additionally on page 5, lines 10-12 of the Office Action, the Examiner further asserts that “the surface includes the lyophilic region and the liquid-repellent region, in the method of Hashimoto, for its benefits of heating specific regions, as disclosed by the Kimura.”

Although may Hashimoto teach that “It has also been suggested that a liquid material be selectively discharged by an ink-jet method onto a lyophilic portion of a substrate on which patterns of a liquid-repellent portion and the lyophilic portion were formed beforehand.” ([0009]), Hashimoto also teaches that “However, regarding this method, since a step of forming patterns of the lyophilic portion and the liquid-repellent portion by using a mask, etc., is required and in addition, a step of providing alignment marks for precisely applying a coating on the lyophilic pattern is also required, the process becomes complicated.” ([0010]).

Since Hashimoto does not require forming a lyophilic region because the process becomes complicated, contrary to Hashimoto’s objective, Applicants contend that there is no suggestion or motivation to combine Hashimoto and Kimura.

In addition, claims 31 and 32 recite a feature of a droplet discharging method with a treatment chamber including a droplet discharging unit and a light irradiation unit. On page 10, lines 20-22 of the Office Action, the Examiner asserts that “Hashimoto teaches forming conductive films on the treated surface using conventional ink-jet processing that includes a droplet discharging unit and a light irradiation unit.”

However, Hashimoto does not teach patterning a specific region to form wiring with lyophilic treatment. In addition, Hashimoto teaches that the process becomes complicated by forming a lyophilic region as described above.

Furthermore, Hashimoto teaches that “the heater 15 can be a device for heat-treating the substrate W by lamp annealing, which performs vaporization and drying of the discharged liquid onto the substrate and, in addition, which performs a heat treatment for converting into the conductive film.” ([0154]).

Since Hashimoto does not teach or suggest forming selectively a lyophilic region with light by a light irradiation unit (the heater 15, in Hashimoto) beforehand, Applicants contend that “the heater 15” cannot correspond to the claimed light irradiation unit. Since the light irradiation unit is not disclosed in Hashimoto alone or a combination with Kimura, Applicants contend that it cannot be said that Hashimoto, taken alone or in combination with Kimura, makes obvious the present invention, as claimed.

In accordance with the M.P.E.P. § 2143.03, to establish a *prima facie* case of obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 409 F.2d 981, 180 USPQ 580 (CCPA 1974). “All words in a claim must be considered in judging the patentability of that claim against the prior art.” *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 196 (CCPA 1970). Therefore, it is respectfully submitted that neither Hashimoto nor Kimura, taken alone or in any proper combination, discloses or suggests the subject matter as recited in claims 18, 31 and 32. Hence, withdrawal of the rejection is respectfully requested.

Each of the dependent claims depend from one of independent claims 18, 31 or 32 and are patentable over the cited prior art for at least the same reasons as set forth above with respect to claims 18, 31 and 32.

In addition, each of the dependent claims also recite combinations that are separately patentable.

In view of the foregoing remarks, this claimed invention, as amended and discussed above, is not rendered obvious in view of the prior art references cited against this application. Applicants therefore request the entry of this response, the Examiner's reconsideration and reexamination of the application, and the timely allowance of the pending claims.

In discussing the specification, claims, and drawings in this response, it is to be understood that Applicants in no way intend to limit the scope of the claims to any exemplary embodiments described in the specification and/or shown in the drawings. Rather, Applicants are entitled to have the claims interpreted broadly, to the maximum extent permitted by statute, regulation, and applicable case law.

Should the Examiner believe that a telephone conference would expedite issuance of the application, the Examiner is respectfully invited to telephone the undersigned agent at (202) 585-8100.

Respectfully submitted,

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